

### REMARKS

This Preliminary Amendment cancels, without prejudice, claims 1 to 8 in the underlying PCT Application No. PCT/EP03/12574 and adds new claims 9 to 24. The new claims, inter alia, conform the claims to United States Patent and Trademark Office rules and does not add any new matter to the application.

In accordance with 37 C.F.R. § 1.125(b), the Substitute Specification (including the Abstract) contains no new matter. The amendments reflected in the Substitute Specification (including Abstract) are to conform the Specification and Abstract to United States Patent and Trademark Office rules or to correct informalities. As required by 37 C.F.R. §§ 1.121(b)(3)(ii) and 1.125(c), a Marked-Up Version of the Substitute Specification comparing the Specification of record and the Substitute Specification also accompanies this Preliminary Amendment. Approval and entry of the Substitute Specification (including Abstract) are respectfully requested.

The underlying PCT Application No. PCT/EP03/12574 includes an International Search Report, dated March 26, 2004, a copy of which is included. The Search Report includes a list of documents that were considered by the Examiner in the underlying PCT application.

It is respectfully submitted that the subject matter of the present application is new, non-obvious and useful. Prompt consideration and allowance of the application are respectfully requested.


Respectfully submitted,

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 *Re. No. 36098*

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[10537/293]

MONITOR INTEGRATED INTO THE DRIVER'S  
SEAT, FOR REAR PASSENGERS

**FIELD OF THE INVENTION**

The present invention relates to a monitor for a motor vehicle having a fastening device and a power and signal supply, the monitor being arranged in a form-fitting fashion on a backrest of a vehicle seat by ~~means of~~ the fastening device, and the vehicle seat having a head restraint with an extendable holder.

**BACKGROUND INFORMATION**

A fastening console for a mobile display screen that is used for rapid and secure mounting in the rear of the automobile is ~~already known from DE~~ described in German Published Patent Application No. 199 43 696 [[A1]]. The fastening console is clamped together by hand around at least one head restraint holder of a vehicle by ~~means of~~ two limbs that are produced from metal or hard plastic and are joined together by a pin, and by ~~means of~~ a clamping bolt and a hand lever connected to it. The structure thus formed constitutes a support for fastening the display screen stably.

**SUMMARY**

~~It is the object~~ According to an example embodiment of the present invention ~~to design and arrange,~~ a vehicle seat with may be provided with a monitor ~~in such a way that the monitor is~~ may be reliably and permanently associated with the head restraint while at the same time avoiding conflicting goals in front and in back as regards the position of the head restraint.

~~This object is achieved according to the invention by virtue of the fact that a~~ A housing part of the monitor ~~is~~ may be

connected directly via the fastening device to a frame part of the backrest of the vehicle seat, and the monitor being mounted in a direction of a horizontally ~~running~~ extending z-axis directly behind the head restraint on the backrest of the vehicle seat.

This ~~results~~ may result in a very stable and secure connection between the monitor and the vehicle seat. A rear passenger would impact against the backrest in the event of a rear-end crash. A collision between the rear passenger and the monitor ~~is~~ may therefore be ruled out. In the event of such an accident, the monitor itself is additionally secured by the head restraint. Moreover, unpleasant vibrations and shaking ~~are~~ may be prevented by the fact that the monitor bears against the head restraint.

The head restraint ~~can~~ may be used to the full by the front passenger, that is to say ~~can~~ may also be adjusted for height, without the rear passengers being adversely affected. The position of the monitor is retained upon adjustment of the head restraint, and conflicting goals ~~are~~ may be avoided. It ~~is~~ may be assured ~~in this case in a way essential to the invention~~ that no disturbing gap ~~occurs~~ may occur between the head restraint and the backrest as a result of which the rear passenger ~~would~~ may be dazzled by oncoming vehicles when watching the monitor.

~~It is advantageous for this purpose that a~~ A rear side, facing the monitor, of the head restraint ~~runs~~ may extend parallel to the rear housing side of the monitor. It is also taken into account ~~in this case~~ that the rear side of the head restraint is not of flat, but of cambered ~~design~~ arrangement. The monitor and the head restraint may thereby form a unit optically and in terms of safety.

An additional possibility ~~in accordance with a development~~ is that the rear side, facing the monitor, of the head restraint bears may bear against the rear housing side of the monitor. The monitor is adapted to the head restraint and is stabilized by the head restraint because it bears against the latter. In the case of a rear-end crash, no additional impulse ~~is~~ may be transmitted from the head restraint onto the monitor, and the monitor ~~is~~ may be additionally secured by the head restraint.

~~It is, furthermore, advantageous that a~~ A sliding layer ~~is~~ may be introduced between the rear side of the head restraint and the rear housing side of the monitor, and the head restraint ~~can~~ may be extended in the direction of an x-axis arranged perpendicularly to the z-axis. The freedom of movement of the head restraint when being retracted and extended is restricted by ~~the fact that the monitor bears~~ bearing against the head restraint. The sliding layer ~~again ensures~~ may ensure the freedom of movement required for retracting and extending the head restraint.

~~It is also advantageous for this purpose that the~~ The frame part of the backrest ~~has~~ may have at least one bearing or a bearing arrangement for the holder of the head restraint and at least one bearing or a bearing arrangement for the fastening device of the monitor. It ~~ensures~~ may ensure that the head restraint is mechanically decoupled from the monitor. ~~The holders known~~ Holders conventional for head restraints are may be applied for fastening the monitor.

~~In accordance with a preferred embodiment of the solution according to the invention it is~~ It may be provided, finally, that the housing of the monitor has cutouts and/or bores for the holder of the head restraint. In this example embodiment, the head restraint is not cushioned on its rear side, and so the holders are not covered. The monitor covers the holders

in the direction of the rear passenger. The housing of the monitor has the cutouts required for this purpose.

~~It is particularly important for the present invention that an~~

5 ~~An~~ adapter ~~is~~ may be introduced between the monitor and the backrest, the adapter being connected to the frame part of the backrest via the fastening device. The adapter is mounted on the backrest and fastened securely on the frame part of the backrest. The energy and signal supply is ~~run~~ routed  
10 underneath the adapter. The mounting of the monitor covers the fastenings for the adapter and the electrical connections for optical and, ~~above all,~~ for safety reasons. It ~~is~~ may be easy to exchange the monitor.

15 ~~It is advantageous in conjunction with the inventive design and arrangement that the~~ The energy and signal supply of the monitor ~~runs~~ may extend downward in the backrest. Introduced inside the backrest in the region of the monitor's fastening device is a cable channel that is guided into the middle  
20 console in conjunction with further cables introduced into the vehicle seat. Cabling that is disturbing optically and in terms of safety and ~~runs~~ extends outside the vehicle seat ~~is~~ may thereby be avoided.

25 ~~It is advantageous, furthermore, that the~~ The monitor can may be swiveled about a y-axis arranged perpendicular to the z-axis and to the x-axis. This results in the possibility of setting the viewing angle of the rear passenger in relation to the monitor with reference to his/her body size and seated  
30 position.

~~The solution according to~~ Example embodiments of the present invention ~~offers~~ may provide the above-described advantages  
features in terms both of safety and operation as regards a  
35 monitor arranged in the head restraint or in the backrest.

Further ~~advantages~~ aspects and details of the invention hereof are explained in more detail below the patent claims and in the following description, and are illustrated in with  
5 reference to the figures, in which: appended Figures

#### BRIEF DESCRIPTION OF THE DRAWINGS

figure Figure 1 shows is a sectional cross-sectional view in an xz-plane between the holders of the head restraint, ~~and~~.

figure Figure 2 shows is a perspective view of a monitor according to an example embodiment of the present invention.

#### DETAILED DESCRIPTION

15 The vehicle seat 3 partially illustrated in figure Figure 1 has a backrest 3.1 with a frame. A frame part 3.2, illustrated in the upper region of the backrest 3.1, of the frame serves the purpose of fastening the head restraint 4.

20 The head restraint 4 is mounted in the frame part 3.2 via two holders 4.1, each in a bearing 3.3, and ~~can~~ may be adjusted in height relative to the vehicle seat 3 in the direction of the x-axis. The bearing 3.3 is ~~designed~~ arranged as a plain bearing.

25 Provided behind the head restraint 4 in the direction of the z-axis is a monitor 1 that is mounted on the backrest 3.1 via an adapter 1.4 and is fastened on the frame part 3.2 of the vehicle seat 3. The rear side 4.2 of the head restraint 4  
30 ~~runs~~ extends parallel to the rear housing side 1.2 of the monitor 1. The monitor 1 bears against the head restraint 4 and is stabilized by the head restraint 4.

The housing 1.3 of the monitor 1 has a housing part 1.1 that  
35 is mounted on the adapter 1.4. The adapter 1.4 is connected

in a form-fitting fashion to the frame part 3.2 via a fastening device 2. For this purpose, the frame part 3.2 has a bearing 3.4 into which the fastening device 2 is introduced.

5 By mounting the monitor 1, the contacts to the energy and signal supply are closed and covered together with the fastening device 2. Consequently, in the event of a rear-end crash, the risk of injury ~~owing~~ due to projecting fastening objects, contacts or cables ~~is~~ may be minimized.

10 ~~In accordance with figure~~ As illustrated in Figure 2, the monitor 1 is associated with the head restraint 4 optically and in terms of safety. The monitor 1 is mounted on the backrest 3.1 of the vehicle seat 3 and firmly connected to the  
15 backrest 3.1. In the event of a rear-end crash, a rear passenger impacts on the backrest 3.1. A collision of the rear passenger with the monitor 1 ~~is~~ may thereby be ruled out. In addition, the head restraint 4 stabilizes the monitor 1 with regard to vibrations produced by the driving dynamics of  
20 the engine and chassis. In order to maximize this stabilization, the monitor 1 bears with the entire rear housing side 1.2 against the rear side 4.2 of the head restraint 4.

25 The head restraint 4 ~~can~~ may be adjusted for height in the direction of the x-axis independently of the position of the monitor 1. In this case, the monitor 1 ~~can~~ may be swiveled about the y-axis in order to enable the rear passenger to set the viewing angle in relation to the display screen 1.5.

30 ~~Owing~~ Due to the firm arrangement of the monitor 1 on the backrest 3.1, ~~the invention ensures~~ it may be that the rear passenger is not dazzled by oncoming vehicles when watching the monitor at night. This is achieved because no gap is  
35 formed between the head restraint 4 and the monitor 1.

The adapter 1.4 additionally has an operator panel 1.6 for the monitor 1.



~~List of reference numerals~~

**LIST OF REFERENCE NUMERALS**

- 1 Monitor
- 1.1 Housing part
- 5 1.2 Rear housing side
- 1.3 Housing
- 1.4 Adapter
- 1.5 Display, display screen
- 1.6 Operator panel
- 10 2 Fastening device
- 3. Vehicle seat
- 3.1 Backrest
- 3.2 Frame part
- 3.3 Bearing, bearing arrangement
- 15 3.4 Bearing, bearing arrangement
- 4 Head restraint
- 4.1 Holder
- 4.2 Rear side

~~Abstract~~

**ABSTRACT**

~~The invention relates to a~~ **A** ~~monitor (1) that~~ is fastened on a vehicle seat ~~(3)~~ of a motor vehicle. The monitor ~~(1)~~ is  
5 optically associated with the head restraint ~~(4)~~ and fastened on a frame part ~~(3.2)~~ of the backrest ~~(3.1)~~. The monitor ~~(1)~~ ~~can~~ **may** be swiveled independently of the position of the head restraint ~~(4)~~. The arrangement of the head restraint ~~(4)~~ parallel to the monitor ~~(1)~~ inhibits the vibration of the  
10 monitor ~~(1)~~ during operation of the motor vehicle and prevents the rear passengers from being dazzled when watching the monitor at night.

~~(Figure 1)~~